UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

AUG 29 2000

FILE:

REPLY TO THE ATTENTION OF: SRF-5J

Mr. Johnny W. Reising
United States Department of Energy
Fernald Area Office
P.O. Box 398705
Cincinnati, Ohio 45239-8705

3214

Subject: Disapproval of the Silos 1 and 2 Accelerated Waste Retrieval (AWR) Project Remedial Design Package

Dear Mr. Reising:

The United States Environmental Protection Agency (U.S. EPA) has reviewed the *Silos 1 and 2 Accelerated Waste Retrieval (AWR) Project Remedial Design Package* (RDP) as part of its oversight activities for Operable Unit 4 at the Fernald Environmental Management Project. The RDP, which is dated June 30, 2000, was prepared by Foster Wheeler Environmental Corporation, subcontractor to Fluor Fernald, for the U.S. Department of Energy. The document provides a revised remedial design (RD) for the Silos 1 and 2 accelerated waste retrieval (AWR) project and responses to U.S. EPA comments on the draft January 2000 AWR RD package. The portions of the RD applicable to site preparation activities were submitted to U.S. EPA and the Ohio Environmental Protection Agency (OEPA) in Silos 1 and 2 AWR Project Site Preparation Package, which was approved by U.S. EPA on May 8, 2000 and by OEPA on May 25, 2000.

U.S. EPA's review of the RDP focused on assessing its technical adequacy and whether the comment responses were adequate and properly incorporated into the revised document. U.S. EPA found several deficiencies with the document package and that responses to four comments on the draft January 2000 RD package are not provided. Therefore, U.S. EPA disapproves the RDP. U.S. EPA's general and specific review comments are enclosed. Please contact me at (312) 886-4591 if you have any questions.

Sincerely,

Gene Jablonowski
Remedial Project Manager
Federal Facilities Section
SFD Remedial Response Branch #2

Enclosure

cc: Tom Schneider, OEPA-SWDO
Bill Murphie, U.S. DOE-HDQ
John Bradburne, Fluor Fernald
Terry Hagen, Fluor Fernald
Tim Poff, Fluor Fernald

ENCLOSURE

TECHNICAL REVIEW COMMENTS ON
"SILOS 1 AND 2 ACCELERATED WASTE RETRIEVAL (AWR)
PROJECT REMEDIAL DESIGN PACKAGE"

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

(Five Pages)

TECHNICAL REVIEW COMMENTS ON
"SILOS 1 AND 2 ACCELERATED WASTE RETRIEVAL (AWR)
PROJECT REMEDIAL DESIGN PACKAGE"

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

GENERAL COMMENTS

Commenting Organization: U.S. EPA
Section #: 2.1 and 2.2 Page #: Not applicable (NA) Line #: NA
Original General Comment #: 1
Comments: The pages in these sections are unnumbered. Similarly, the figures and exhibits are unnumbered with consecutive page numbers and Exhibit 1-1 and the index are missing. These deficiencies should be corrected.

Commenting Organization: U.S. EPA
Section #: 2.2 Page #: NA Line #: NA
Original General Comment #: 2
Comments: Under the "Alarms" column in the Key Parameters/Set Point Table, the table should indicate whether both high and low alarms are provided or whether only one of the alarms is furnished.

Commenting Organization: U.S. EPA
Appendix #: A Page #: NA Lines #: NA
Original General Comment #: 3
Comments: A number of drawings in this appendix contain a note stating that "for general notes see drawing 05FMD004." However, this drawing is not included in this submittal. In addition, a number of drawings are listed as "reference drawings," but none of these drawings are included in this submittal. Finally, many drawings indicated in the process flow diagrams are not included in this submittal. The missing drawings should be included in the document to facilitate proper review and to provide continuity.

Commenting Organization: U.S. EPA
Appendix #: C Page #: NA Lines #: NA
Original General Comment #: 4
Comments: The total mass and volume values shown in the mass balance tables do not agree with the flow rates, densities, and times shown. The tables should be reviewed and corrected so that all totals agree with the flow rates indicated over the times shown.

SPECIFIC COMMENTS

Commenting Organization: U.S. EPA
Section #: 2.1 Page #: NA Lines #: NA
Original Specific Comment #: 1
Comments: In subsection 6, the text states that "the ducting arrangement, in conjunction with the automated monitoring and damping system, prevents backflow of contaminated gases to the atmosphere." It is not clear how this will be achieved because the silos will be allowed to operate at +0.5 inch of water gauge (WG). If the silos

will be operated at positive pressure at any time, the "contaminated gases" from the silos will backflow to the atmosphere through cracks in the silos as well as through other gaps or openings. The text should be revised to address this issue.

Commenting Organization: U.S. EPA
Section #: 2.1 Page #: NA Lines #: NA
Original Specific Comment #: 2
Comments: Exhibit 6-1 is illegible. A better quality copy should be provided.

Commenting Organization: U.S. EPA
Section #: 2.2 Page #: NA Lines #: NA
Original Specific Comment #: 3
Comments: The Key Parameters/Set Point Table indicates that the function of the instrument with Tag No. PDI-SILO-20-001 is to monitor and control silo pressure and that the response will be to "damper modulation to regain operating set point: system shut-down on unrelieved pressure conditions." It is not clear how this will work because no instrumentation drawings and loop diagrams are included in the document. However, if the pressure inside the silo is positive (+0.5 inch WG) and rising, the system will sound an alarm and then shut down if the pressure continues to rise. If the pressure is rising, the system should not shut down. In fact, it is advisable to have a standby system to prevent the silos from overpressurization. The text should be revised to address these issues.

Commenting Organization: U.S. EPA
Section #: 2.2 Page #: NA Lines #: NA
Original Specific Comment #: 4
Comments: In the Key Parameters/Set Point Table, for Tags No. GA-CHR-20-001B, GA-DDS-20-001A, GA-CHR-20-001A, and GA-DDS-20-001B, descriptions in the L-SP and H-SP (low and high setpoints) columns are too large to fit in the space provided. The table should be revised to correct this problem.

Commenting Organization: U.S. EPA
Section #: 2.2 Page #: NA Lines #: NA
Original Specific Comment #: 5
Comments: In the Key Parameters/Set Point Table for Tag No. 1S-STK-20-001, the descriptions in the instrument range, L-SP, H-SP, and response columns are too large to fit in the space provided. The table should be revised to correct this problem.

Commenting Organization: U.S. EPA
Section #: 2.2 Page #: NA Lines #: NA
Original Specific Comment #: 6
Comments: In the Key Parameters/Set Point Table for Tags No. PIT-PMP-1-301P through PIT-SS-003, the responses read "Alerts operations of out of potential problems." Because the instruments appear to only have high-pressure alarms, it is not clear what these responses mean. The table should be revised to address this issue.

Commenting Organization: U.S. EPA
Appendix #: A Page #: NA Lines #: NA
Original Specific Comment #: 7
Comments: Drawings No. 11FMD008, 77FMD004, and 77FMD008 are shown as voided. It is unclear how the system was modified or replaced because no explanations are provided for this change. The document should explain how the system was modified.

Commenting Organization: U.S. EPA
Appendix #: A Page #: NA Lines #: NA
Original Specific Comment #: 8
Comments: Drawing No. 51FMD001 is shown as voided. It is unclear which system will replace this one because no reason is provided for this change. The document should explain how the system was modified.

Commenting Organization: U.S. EPA
Appendix #: A Page #: NA Lines #: NA
Original Specific Comment #: 9
Comments: Drawings No. 11FMD003 and 11FMD009 show "decon water" entering the sluice module. However, it is not clear what the source of the decon water is and no drawing reference is shown. The drawings should be corrected to indicate the source of the decon water.

Commenting Organization: U.S. EPA
Appendix #: A Page #: NA Lines #: NA
Original Specific Comment #: 10
Comments: In Drawing No. 10FMD003, it is unclear why the make-up air is introduced into the fan suction where it mixes with air that will be discharged through the stack. It is also unclear how the air flow is controlled. There are in-flow meters indicated, but it is unclear how the dampers are controlled because no process and instrumentation drawings are provided. It may be advisable to introduce make-up air into the silo directly. The design should be reviewed and revised accordingly. In addition, point identification drawings should be included to facilitate review of the proposed systems.

Commenting Organization: U.S. EPA
Appendix #: B Page #: NA Lines #: NA
Original Specific Comment #: 11
Comments: Drawings No. 11FMD025, 11FMD026, and 20FMD029 are shown as voided. However, no reason is provided for voiding these drawings. The document should explain how the system was modified.

Commenting Organization: U.S. EPA
Appendix #: C Page #: NA Lines #: NA
Original Specific Comment #: 12
Comments: The mass balance tables shown in Drawing No. 10FMD001 indicate precise flows for each of the streams. It is not clear how these flows will be achieved because Drawing No. 10MFD003 does not indicate any flow measuring devices. In addition, it is not clear how the motorized dampers are controlled. The drawings should be revised to indicate all the flow measuring devices, including

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their control signals, interlocks, and other details to illustrate how the entire system will work.

Commenting Organization: U.S. EPA
Appendix #: C Page #: NA Lines #: NA
Original Specific Comment #: 13
Comments: In Drawing No. 10FMD006, Stream No. 4 (decant water to be filtered) is shown to have a flow rate of 320 gallons per minute, and the system will be operational for 24 minutes per day. This will produce a total volume of 7,680 gallons of water, not 7,520 as shown in the mass balance table on the drawing. The table should be corrected accordingly. In addition, the total volumes shown for Streams No. 7 and 21 do not agree with the flow rates indicated and the times shown in the table. The solids also do not agree with the density, volume of slurry, and time of operation indicated. The table should be reviewed and all values corrected accordingly.

Commenting Organization: U.S. EPA
Appendix #: C Page #: NA Lines #: NA
Original Specific Comment #: 14
Comments: In the mass balance table in Drawing No. 11FMD001, the total volume and total mass shown for Streams No. 1, 4, 7 (all three), 8, 21, 28, 29, 30, and 37 do not agree with the flow rates, times, and densities indicated in the table. In addition, the total volumes do not agree with the flow rates and times shown for streams No. 10, 12, 13, and 15. It appears that all the tables in Appendix C need to be reviewed and corrected (see Original General Comment No. 4). The mass balance tables should be revised as required.

Commenting Organization: U.S. EPA
Appendix #: I Page #: 8 Lines #: NA
Original Specific Comment #: 15
Comments: Original Specific Comments No. 15 and 16, 17, and 18 on the berm excavation plan and sampling plan, respectively, in the January 2000 remedial design package have not been addressed. Responses to these comments should be provided.

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